UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,086	12/14/2001	Gaston R. Biessener	1009-003US01	9997

28863 7590 05/05/2004	EXAMINER
SHUMAKER & SIEFFERT, P. A.	ELMORE, STEPHEN C

8425 SEASONS PARKWAY	ART UNIT	PAPER NUMBER
SUITE 105	2186	
ST. PAUL, MN 55125		7

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application N● ●	Applicant(s)
Office Action Summary	10/020,086	BIESSENER ET AL.
	Examiner	**Art Unit**	
	Stephen Elmore	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>December 14 , 2001 - August 27, 2003</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☒ Claim(s) *46,48,54 and 57* is/are allowed.
6)☒ Claim(s) *1-45,47,49-53,55,56 and 58* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *14 December 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
            application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *4-6*.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-58 are presented for examination.

2.   The specification has not been checked to the extent necessary to determine the presence

of all possible minor errors. Applicant's cooperation is requested in correcting any errors of

which applicant may become aware in the specification.

Drawings

3.   The drawings are objected to because

     a.   Fig. 2 shows outputs 12 and 14 which do not have their destinations labeled,

therefore the figure is indefinite;

     in the following figures, text appearing in the indicated elements have errors in text

drafting,

     b.   Fig. 5, elements 46 and 50;

     c.   Fig. 8, element 77;

     d.   Fig. 11, elements 92 and 104;

     e.   Fig. 13, element 122.

     A proposed drawing correction or corrected drawings are required in reply to the Office

action to avoid abandonment of the application. The objection to the drawings will not be held

in abeyance.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

5.   Claims 1-45, 47, 49-53, 55, 56 and 58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are indefinite because:

    a.   claim 1, the language *updating the VSM to reallocate the primary virtual storage to include data written to the secondary virtual storage*

    is not clear because it is unknown whether the "reallocate" activity <u>transfers</u> the data to the primary virtual storage so as to include the data written to the secondary virtual storage or whether it <u>copies</u> the data (leaving a copy of the data in the secondary virtual storage), the language "reallocate the primary virtual storage" does not clearly distinguish what scope of meaning the language is meant to cover;

    b.   claims 1, 3, 20, and 23 the language *updating the VSM*

    is not clear as to what scope of action or actions are meant to be covered by the "updating" activity;

    c.   claim 16, the language *adjusting the VSM to redefine the primary virtual storage to include the data written to the secondary storage device after T.sub.0*

    is not clear because it is unknown whether the "adjusting...to redefine...to include" activity <u>transfers</u> the data to the primary virtual storage so as to include the data written to the secondary virtual storage or whether it <u>copies</u> the data (leaving a copy of the data in the secondary virtual storage), the language "adjusting...to include" does not clearly distinguish what scope of meaning the language is meant to cover;

    d.   claim 20, the language *updating the VSM to reallocate the primary virtual storage*

is not clear because it is unknown whether the "reallocate" activity <u>transfers</u> the data to the primary virtual storage so as to include the data written to the secondary virtual storage or whether it <u>copies</u> the data (leaving a copy of the data in the secondary virtual storage), the language "reallocate the primary virtual storage" does not clearly distinguish what scope of meaning the language is meant to cover;

      e.   claim 23, the language *update the VSM to reallocate the primary virtual storage to include data written to the secondary virtual storage*

is not clear because it is unknown whether the "reallocate" activity <u>transfers</u> the data to the primary virtual storage so as to include the data written to the secondary virtual storage or whether it <u>copies</u> the data (leaving a copy of the data in the secondary virtual storage), the language "reallocate the primary virtual storage" does not clearly distinguish what scope of meaning the language is meant to cover;

      f.   claim 25, the language *wherein the control unit reallocates the primary virtual storage in response to the save command*

is not clear because it is unknown what activity is being covered by the "reallocates" term;

      g.   claim 38, line 6, in the second instance of the language *a storage system* it is not clear whether or not this language represents an antecedent basis problem;

      h.   claim 41 recites the limitation *"the control unit"* in line 2, there is insufficient antecedent basis for these limitations in these claims;

      i.   claim 47, the language *wherein receiving requests the requests with a controller coupled between the processor and a storage device via an input/output (I/O) bus*

is non-idiomatic English;

    j.   claim 49, the language *adjusting the VSM*

is not clear because it is unknown what activity is being covered by the "adjusting" term;

    k.   claim 50, the language *wherein adjusting the VSM comprises redefining the*

primary virtual storage to include the data written to the secondary storage device after T.sub.0.

is not clear because it is unknown whether the "redefining" activity <u>transfers</u> the data to

the primary virtual storage so as to include the data written to the secondary virtual storage or

whether it <u>copies</u> the data (leaving a copy of the data in the secondary virtual storage), the

"redefining" does not clearly distinguish what scope of meaning the language is meant to cover;

    l.   claim 52 recites the limitation *"the controller"* in line 5, there is insufficient

antecedent basis for these limitations in these claims;

    m.   claims 55 and 56, the language *adjusting the VSM*

is not clear because it is unknown what activity is being covered by the "adjusting" term;

    n.   claim 58, the language *wherein adjusting the VSM comprises*

redefining the primary virtual storage to include the data written to the secondary

storage device after T.sub.0.

is not clear because it is unknown whether the "adjusting...to redefine...to

include" activity <u>transfers</u> the data to the primary virtual storage so as to include the

data written to the secondary virtual storage or whether it <u>copies</u> the data (leaving a

copy of the data in the secondary virtual storage), the language "adjusting...to

include" does not clearly distinguish what scope of meaning the language is meant to

cover;

o.   claims 8-15, 17-19, 21, 22, 24, 26-37, 39, 40, 42-45, 51 and 53 inherit

the deficiencies of the preceding claim in the claim dependency chain.

Allowable Subject Matter

6.   Claims 46, 48, 54 and 57 appear allowable over the prior art of record.

7.   Claims 1, 23, 38, 49, and 52 appear to be allowable if rewritten or amended to overcome

the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

8.   Claims 2-22, 24-37, 39-45, 47, 50-53, 55, 56, and 58 appear to be allowable if rewritten

to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office

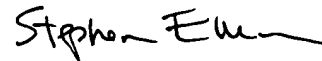action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Stephen Elmore whose telephone number is (703) 308-6256. The

examiner can normally be reached on Mon-Fri from 7:30-4:00.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Kim can be reached on (703) 305-3821. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen Elmore
Assistant Examiner
Art Unit 2186

May 3, 2004